Form PTO-1449		(010)				Atty. Docket 1894-0050		Serial No 09/711,0	
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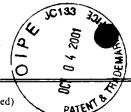
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Sheet 1 of 13

Atty. Docket No. Serial No. Form PTO-1449 (Modified) 09/711,655 1894-00501 INFORMATION DISCLOSURE SATELY EMENT BY APPLICANT Applicant Michael A. FREEMAN et al. (Use several sheets if necessary) Filing Date November 13, 20 Group REFERENCE DESIGNATION U.S. PATENT DOCUMENTS FILING DATE IF APPROPRIATE SUB-**CLASS** DOCUMENT DATE NAME **EXAMINER** CLA NUMBER INITIAL 8.53 252 02/29/44 Dobson et al. 2,343,136 AΑ 8.55 07/08/52 Snyder et al. 252 03/10/1949 2,602,778 AB 1.8 05/04/1948 09/08/53 Teichmann 255 AC2,651,500 22 01/02/1951 Menaul 166 2,681,704 06/22/54 AD 06/18/1954 8.55 252 ΑE 07/30/57 Menaul 2,801,218 01/16/1953 195 3 AF 2,807,570 09/24/57 Updegraff 9 02/13/1964 166 11/29/66 Johnston AG 3,288,211 65 01/26/1970 175 AΗ 3,628,615 12/21/71 Chenevert 09/09/1969 210 11 3,634,227 01/11/72 Patterson, Jr. ΑI 195 56 11/18/1968 01/18/72 Battistoni et al. ΑJ 3,635,797 8.55 12/19/1969 252 08/15/72 Cayle et al. ΑK 3,684,710 FOREIGN PATENT DOCUMENTS CLASS SUB-Translation COUNTRY DOCUMENT DATE **CLASS** NUMBER YES NO CHD 3/386 **EPO** yes 02/22/95 0 356 239 B1 ΑL 17/00 CHD 0 361 677 B2 07/04/01 **EPO** yes AM C 12 N 9/24 **EPO** yes 0 030 393 B1 06/15/83 AN 25/10 **EPO** A01N yes 0 880 892 A1 02/12/98 AO OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.) SPE 36429, by Beall et al., "Evaluation of a New Technique for Removing Horizontal Wellbore Damage AP Attributable to Drill-in Filter Cake," October 6-9, 1996. Borman, "Bacteria That Flourish Above 100° C Could Benefit Industrial Processing," C&EN --AQ Science/Technology, 31-34, November 4, 1991. SPE 29822, Brannon and Tjon-Joe-Pin, "Application of Polymeric Damage Removal Treatment Results in Multi-AR Fold Well Productivity Improvement: A Case Study," pp. 491-501, March 11-14, 1995. DATE CONSIDERED EXAMINER

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Form PTO-1449 (Modified)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Atty. Docket No. 1894-00501

Serial No. 09/711,655

Applicant

Michael A. FREEMAN et al.

Filing Date November 13, 2000

Group 1712

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XAMINER IITIAL		DOCUMENT NUMBER	DATE	NAME	CL	C	UB-()( LASS	FILING APPROP	
PH	AS	3,765,918	10/16/73	Jordan et al.	106	2	70	07/17/19	)72
<del></del>	AT	3,841,419	10/15/74	Russell	175	4	0	09/14/15	
	AU	3,954,627	05/04/76	Dreher et al.	252	. 8	.5 P	11/07/19	)73
	AV	3,966,618	06/29/76	Colegrove	252	8	.55 D	10/10/19	)74
_	AW	4,003,846	01/18/77	Kuhn et al.	252	3	16	11/13/19	<del></del>
	AX	4,016,085	04/05/77	Finn et al.	252	. 8	.5 C	07/02/19	)75
	AY	4,039,028	08/02/77	Knight	166	2	46	11/03/19	75
	AZ	4,119,546	10/10/78	Wernau	252	8	.55 D	05/03/19	)77 
	ВА	4,157,116	06/05/79	Coulter	166	2	80	06/05/19	78
77	ВВ	4,160,483	07/10/79	Thomas et al.	166	3	07	07/21/19	78
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	BC	0 954 966 A1	11/10/99	EPO	A0	1N 2	5/10	yes	
R	BD	WO 91/18974	12/12/91	PCT	C1:		/00	yes	
	BE	WO 97/24178	12/12/91	PCT	B0		3/16	yes	$\vdash$
-	BF	WO 92/20771	11/26/92	РСТ	CI	1D 3	/386	yes	
	BG	WO 94/01654	01/20/94	PCT	E2	1B 3	7/08	yes	
P	ВН	WO 98/20230	05/14/98	PCT	E2	IB 3	7/06	yes	
- + -		THE DATE		F4-)					
MERARI (	BI BI	High-Temperatu	non and Tjor	n-Joe-Pin, " <i>Biotechnolog</i> g <i>Applications</i> ," pp. 513-	530, September 25-28	, 1994.			ate to
31	ВЈ	SPE 27393, Burnett, "Using a Physical Wellbore Model to Study Formation Damage Problems In Well Completions," pp. 495-504, February 7-10, 1994.						In Well	
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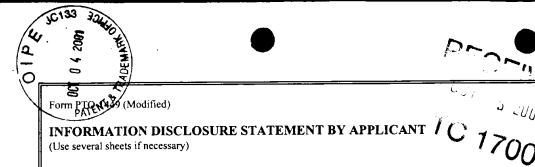
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Ohny, Docket No. 1894-00501

Serial No. 09/711,655

Applicant Michael A. FREEMAN et al.

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REFERENCE 1	DESIGNATI	ON U.S. PATENT D	OCUMENTS						
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME		CLASS	SUB- CLASS		DATE I
P. T	BK	4,182,860	01/08/80	Naslund et al.		536	114	05/09/1	977
	BL	4,202,795	05/13/80	Burnham et al.		252	332	09/28/1	978
	ВМ	4,207,194	06/10/80	Sharpe et al.		252	8.55 B	06/08/1	978
-	BN	4,290,899	09/22/81	Malone et al.		252	8.5 A	01/04/1	979
	во	4,310,425	01/12/82	Key et al.		252	8.5 A	04/17/1	980
	BP	4,326,037	04/20/82	Griffith et al.		435	274	11/01/1	979
	BQ	4,342,866	08/03/82	Kang et al.		536	119	04/23/1	981
	BR	4,343,363	08/10/82	Norton et al.		166	281	01/02/1	981
	BS	4,359,392	11/16/82	Rygg		252	8.55 R	12/29/1	980
87	ВТ	4,384,963	05/24/83	Soepenberg et al.		252	8.5 C	06/11/1	980
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0.	DI	2 283 519 B	05/10/95	UK		E 21 B	37/08	yes	
	BU	2 338 254 A	12/15/99	UK		E 21 B	37/06	yes	+
	BV	2 336 234 K	12/13/33			<u> </u>			
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	BW	Structure/Prope	Cadmus and Slodki, "Bacterial Degradation of Xanthan Gum," Industrial Polysaccharides: Genetic Engineeri structure/Property Relations and Applications edited by M. Yalpani, pp. 101-107, 1987.						
	BX	Developments	Cadmus and Slodki, "Enzymic Breakage of Xanthan Gum Solution Viscosity in the Presence of Salts," Developments in Industrial Microbiology, 26:281-289, August 11-17, 1984.						
	BY		Chilingarian, et al., "Drilling and Drilling Fluids, Developments in Petroleum Science," p. 11, 1981.						
	BZ	Helmick and L API Drill. Prod		sure-Differential Sticking of Dri. 5-60, 1957.	ll Pipe and	How it Ca	n Be Avoid	ed or Reli	eved,"
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Applicant

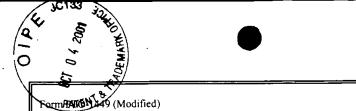
Michael A. FREEMAN et al.

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME		CLASS	SUB- CLASS	FILING I APPROP	
Pt	CA	4,406,798	09/27/83	Miller et al.		252	8.55 D	08/24/19	81
	СВ	4,410,625	10/18/83	Cadmus		435	42	02/04/19	82
	СС	4,414,334	11/08/83	Hitzman		435	262	08/07/19	81
	CD	4,423,781	01/03/84	Thomas		166	312	05/03/19	82
	CD	4,450,908	05/29/84	Hitzman		166	246	04/30/19	82
	CF	4,474,240	10/02/84	Oliver, Jr. et al.		166	312	01/24/19	83
	CG	4,479,543	10/30/84	Kalfayan et al.		166	300	07/28/19	83
	СН	4,486,340	12/04/84	Glass, Jr.		252	8.55 D	06/24/19	82
	CI	4,502,967	03/05/85	Conway		252	8.55 R	05/08/19	84
	Cì	4,506,734	03/26/85	Nolte		166	308	09/07/19	83
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07	СК	DD221791A1	02/10/84	Germany		E21B	43/00	yes	NO
H	CL	DD240905A1	09/13/85	Germany		C09K	7/02	yes	
OTHER ART	Including .		rtinent Pages.	Ftc )			<u>l</u>		
P	CM	SPE 31082, Hod Damage," pp. 10	lge et al., " <i>Eva</i> 01-115, Februa	valuation and Selection of L uary 14-15, 1996.					
	CN	Patents," J. Poly	mer Sci.: Sym	acellular Microbial Polysa mposium No. 45, 209-227,	, 1974.				
	СО	4.188-192, 1993	3.	From High-Temperature M					
P	СР	H.D. Outmans, " 274, 1958.	Mechanics of	f Differential-Pressure Stic	cking of Drill Col	lars," Tran	s. AIME, V	ol. 213, pp	. 265-
EXAMINER		P. TUCKES	<u> </u>		DATE CONSID	ERED	4/03		

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Atty. Docket No. 1894-00501

Serial No. 09/711,655

Applicant
Michael A. FREEMAN et al.

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$\mathcal{D}'$	CQ	4,514,309	04/30/85	Wadhwa	252	8.55 R	12/27/1982
	CR	4,519,922	05/28/85	Sutton et al.	252	8.5 B	03/21/1983
	cs	4,535,153	08/13/85	Kang et al.	536	123	03/08/1984
	СТ	4,539,122	09/03/85	Son et al.	252	8.55 R	02/21/1984
_	CU	4,541,485	09/17/85	Block	166	281	06/24/1983
	CV	4,552,591	11/12/85	Millar	106	18.33	05/15/1984
	CW	4,552,673	11/12/85	Grolitzer	252	8.55 D	10/24/1983
	CX	4,561,985	12/31/85	Glass, Jr.	252	8.5 A	06/28/1982
	CY	4,575,551	03/11/86	Fujiyama et al.	536	123	10/25/1983
M	CZ	4,607,099	08/19/86	Kanda et al.	536	114	12/03/1984
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<del>- 10</del>	DB	the Gulf of Mex	ico," OTC 73	Offshore Horizontal Drill 52, 861-868, May 3-6, 19	93.		
P	DC	October 22-25,	1995.	d Clean-Up in Horizontal			
P	DD			roleum Well Construction			
A	DE	Slodki and Cad Microbes and C	mus, " <i>Produc</i> Dil Recovery	ction and Stability of Xant Vol. 1, International Biore	han Gums; Xanthanases sources Journal, pp. 190-	and Their App 199, 1985.	olicability,"
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Atty. 200 ket No. 1894-00501 Serial No. 09/711,655

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Michael A. FREEMAN et al.

Filing Date November 13, 2000

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Pl	DF	4,609,475	09/02/86	Hanlon et al.	252	8.55 B	02/24/1984		
	DG	4,615,740	10/07/86	Ppelezo et al.	106	177	03/08/1985		
	DH	4,619,764	10/28/86	Church et al.	210	248	06/19/1984		
	DI	4,619,772	10/28/86	Black et al.	252	8.514	05/23/1982		
	DJ	4,622,153	11/11/86	Watson et al.	252	8.514	01/25/1980		
	DK	4,665,985	05/19/87	Berrod et al.	166	281	02/19/1985		
	DL	4,690,891	09/01/87	Hou et al.	435	42	09/11/1985		
	DM	4,713,449	12/15/87	Vanderslice et al.	536	123	08/06/1985		
	DN	4,741,401	05/03/88	Walles et al.	166	300	01/16/1987		
p	DO	4,756,836	07/12/88	Jeffrey et al.	210	750	05/07/1986		
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P	DP	1993.			thanase, " Journal of Industr				
Ø	DQ	11, 1982.	Cadmus et al, "Biodegradation of Xanthan Gum by Bacillus sp.," Applied and Environmental Microbiology, 5-11, 1982.						
97	DR	Consortium," in	Ahlgren, "Characterization of Xanthan Gum Degrading Enzymes from a heat-stable, Salt-tolerant Bacterial Consortium," in Microbial Enhancement of Oil Recovery: Recent Advances, edited by Premuzic and Woodhead; published by Elsevier: Amsterdam, pp. 55-63, 1993.						
Ω'	DS		H.C.H. Darley & George R. Gray, "Composition and Properties of Drilling and Completion Fluids," (5th Ed.), pp. 1-37, 1988.						



Form PTO-1448 (Modified)

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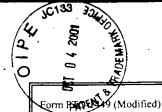
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Applicant
Michael A. FREEMAN et al.

Atty. Docket No. 1894-00501

Serial No. 09/711,655

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Pt	DT	4,770,796	09/13/88	Jacobs	25	2	8.553	01/12/1	987
	DU	4,809,783	03/07/89	Hollenbeck et al.	16	6	307	01/14/8	8
	DV	4,886,746	12/12/89	Cadmus et al.	43	5	42	05/10/1	988
	DW	4,899,818	02/13/90	Jennings, Jr. et al.	16	6	270	12/30/1	988
	DX	4,919,209	04/24/90	King	16	6	300	01/17/1	989
	DY	4,928,763	05/29/90	Falk	16	6	250	03/31/1	989
	DZ	4,940,539	07/10/90	Weber	21	0	149	05/08/1	989
	EA	4,941,533	07/17/90	Buller et al.	16	6	252	05/16/1	989
	EB	4,957,165	09/18/90	Cantu et al.	16	6	295	06/19/1	989
M	EC	4,968,532	11/06/90	Janssen et al	42	:7	164	01/13/1	989
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01	EF			d Properties of a Xanth ournal of Industrial Mic				le Salt-T	olerant
PT	EG	SPE 39439, H and its Cleans	SPE 39439, H.J.K. Ladva et al., "Mechanisms of Sand Control Screen Plugging From Drill-In Fluids and its Cleanup Using Acid, Oxidizers and Enzyme Breakers," February 18, 1998.						
01	ЕН	SPE 50709, ". (1999).	New Enzyme	Process for Downhole	e Cleanup of Reserve	oir Dri	lling Filte	ring Cal	ke,"
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Atty. Docket No. 1894-00501

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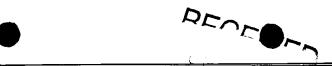
Michael A. FREEMAN et al.

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Group November 13, 2000 1712

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PC	EI	4,978,481	12/18/90	Janssen et al.	264	1.4	01/13/1989		
	EJ	4,996,153	02/26/91	Cadmus et al.	435	209	08/29/1989		
1	EK	5,032,297	07/16/91	Williamson et al.	252	8.551	05/19/1989		
	EL	5,035,900	07/30/91	Langley et al.	424	484	08/24/1989		
	ЕМ	5,055,209	10/08/91	Bridges et al.	252	8.51	05/01/1989		
	EN	5,067,566	11/26/91	Dawson	166	308	01/14/1991		
	EO	5,094,785	03/10/92	Law et al.	264	4.3	11/22/1989		
	EP	5,102,558	04/07/92	McDougall et al.	252	8.551	01/04/1991		
	EQ	5,102,559	04/07/92	McDougall et al.	252	8.551	01/04/1991		
0	ER	5,103,905	04/14/92	Brannon et al.	166	250	05/03/1990		
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P	ES	SPE 58749, ". Filter Cakes,"	Factors Affe M.R. Luys	ecting the Performance ter, T.D. Monroe, S.A.	of Enzyme Breakers for R Ali, February 23-24, 2000	Removal of O.	Xanthan-Based		
fT	ЕТ	SPE 19433 (P G.W. Hawkin	art 1), "Enc. s, and H.D.	apsulated Breaker for A Brannon, Society of Pe	Aqueous Polymeric Fluids troleum Engineers, Inc.,	s," J. Gulbi February 2	is, M.T. King, 2-23, 1990.		
P7	EU	SPE 19433 (P G.W. Hawkin	SPE 19433 (Part 2), "Encapsulated Breaker for Aqueous Polymeric Fluids," J. Gulbis, M.T. King, G.W. Hawkins, and H.D. Brannon, Society of Petroleum Engineers, Inc., February 1992.						
H	EV		"New Applications for Enzymes in Oil and Gas Production," R.E. Harris, I.D. McKay, Petroleum Engineer International, pp. 65-69, April 1999.						
		^ -			DATE CONSIDERED				

conformance and not considered. Include copy of this form with next communication to the applicant.



Form PTO 1 49 (Modified)
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Atty. Docket No. 1894-00501

Serial No. **09/711,655** 

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Applicant

Michael A. FREEMAN et al.

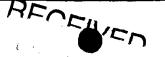
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Pl	EW	5,106,518	04/21/92	Cooney et al.	252	8.551	11/09/1990	
	EX	5,110,486	05/05/92	Manalastas et al.	252	8.551	03/28/1991	
	EY	5,126,051	06/30/92	Shell et al.	210	632	12/21/1990	
	EZ	5,164,099	11/17/92	Gupta et al.	252	8.551	12/06/1990	
	FA	5,165,477	11/24/92	Shell et al.	166	291	04/08/1992	
-	FB	5,194,263	03/16/93	Chamberlain et al.	504	347	08/26/1991	
	FC	5,201,370	04/13/93	Tjon-Joe-Pin	166	300	02/26/1992	
	FD	5,224,544	07/06/93	Tjon-Joe-Pin et al.	166	295	02/26/1992	
	FE	5,226,479	07/13/93	Gupta et al.	166	300	01/09/1992	
PT	FF	5,247,995	09/28/93	Tjon-Joe-Pin et al.	166	312	07/08/1992	
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PT	FG	Drilled Using	Starch Base	ed Fluids," by K.P. O"I	of Mud Polymer Damage Driscoll and N.M. Amin, I DC/SPE Drilling Confere	BJ Service:	s Co. Middle	
PT	FH	Based Drilling	SPE 35594, "Utilization of Polymer Linkage Specific Enzymes to Degrade HEC Polymer in Water Based Drilling and Gravel Packing Fluids," by W.D. Wood, SPE, BJ Services, E.L. Dennis, SPE, Chevron U.S.A., Gregory D. Dean, SPE BJ Services, Society of Petroleum Engineers, 1996.					
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP §609; Draw line through citation if not in

conformance and not considered. Include copy of this form with next communication to the applicant.

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Form PTO 149 (Modified)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

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Atty. Docket No. Serial No. 1894-00501 09/711,655

Applicant

Michael A. FREEMAN et al.

Filing Date Group November 13, 2000 1712

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PT	FI	5,310,721	05/10/94	Lo	504	116	04/27/1	993	
	FJ	5,324,445	06/28/94	Langley et al.	252	174.12	07/23/1	991	
	FK	5,370,184	12/06/94	McDougall et al.	166	278	06/02/1	993	
	FL	5,373,901	12/20/94	Norman et al.	166	300	07/27/1	993	
	FM	5,421,412	06/06/95	Kelly et al.	166	300	03/10/1	994	
-	FN	5,437,331	08/01/95	Gupta et al.	166	300	08/24/1	994	
	FO	5,441,109	08/15/95	Gupta et al.	166	300	04/19/1	994	
	FP	5,447,197	09/05/95	Rae et al.	166	293	01/25/1	994	
	FQ	5,460,817	10/24/95	Langley et al.	424	408	03/12/1	993	
A	FR	5,492,646	02/20/96	Langley et al.	252	174	11/15/1	993	
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ff	F5	Beall, SPE, R	SPE 38570, "Field Experience Validates Effectiveness of Drill-In Fluid Cleanup System," by B.B. Beall, SPE, R. Tjon-Joe-Pin, SPE, and H.D. Brannon, SPE, BJ Services Co., U.S.A., Society of Petroleum Engineers, 1997.						
97	FT	SPE 38162, ". Pin, SPE, B.B	SPE 38162, "Biotechnological Treatment Removes Xanthan-Based Skin Damage," by R.M. Tjon-Joe- Pin, SPE, B.B. Beall, H.D. Brannon, SPE, BJ Services Co., Society of Petroleum Engineers, 1997.						

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PT	FU	5,551,515	09/03/96	Fodge et al.	166	300	05/26/1995
1	FV	5,562,160	10/08/96	Brannon et al.	166	250.1	10/18/1995
	FW	5,566,759	10/22/96	Tjon-Joe-Pin et al.	166	300	01/09/1995
	FX	5,580,844	12/03/96	Swarup et al.	507	201	05/27/1994
	FY	5,591,700	01/07/97	Harris et al.	507	204	12/22/1994
	FZ	5,604,186	02/18/97	Hunt et al.	507	204	02/15/1995
	GA	5,678,631	10/21/97	Salisbury et al.	166	304	06/07/1995
	GB	5,678,632	10/21/97	Moses et al.	166	307	02/28/1996
	GC	5,805,264	09/08/98	Janssen et al.	351	160 R	01/26/1994
9	GD	5,806,597	09/15/98	Tjon-Joe-Pin et al.	166	300	05/01/1996
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Form PT6419 (Modified)

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use several sheets if necessary)

Atty. Docket No. 1894-00501

Serial No. **09/711,655** 

Applicant

Michael A. FREEMAN et al.

Filing Date

November 13, 2000 | 1

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P	GE	5,813,466	09/29/98	Harris et al.	166	300	02/24/1997
	GF	5,837,290	11/17/98	Hasslin	424	489	06/05/1995
	GG	5,881,813	03/16/99	Brannon, et al	166	304	11/06/1996
	GH	5,895,757	04/20/99	Pope	435	176	08/18/1997
	GI	5,908,623	06/01/99	Baetge et al.	424	93.21	05/25/1995
	GJ	5,914,182	06/22/99	Drumheller	428	308.4	06/03/1996
	GK	5,916,790	06/29/99	Enevold	435	178	03/03/1995
	GL	5,932,385	08/03/99	Takamura et al.	430	63	10/23/1997
	GM	5,948,735	09/07/99	Newlove et al.	507	238	04/14/1997
	GN	5,955,503	09/21/99	Leone-Bay et al.	514	563	02/06/1997
M	GO	5,962,015	10/05/99	Delrieu et al	424	450	05/02/1997
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PT	GP	5,965,121	10/12/99	Leone-Bay et al.		424	85.2	02/06/1997	
	GQ	5,968,794	10/19/99	Samain et al.		435	178	01/23/19	<del>)</del> 98
	GR	5,972,387	10/26/99	Milstein et al.		424	491	11/21/19	)94
	GS	6,069,118	05/30/00	Hinkel et al.		507	277	05/28/1998 03/07/1997 08/03/1998 12/07/1998	
	GT	6,110,875	08/29/00	Tjon-Joe-Pin et al.		507	201		
	GU	6,131,661	10/17/00	Conner et al.		166	300		
	GV	6,138,760	10/31/00	Lopez et al.		166	300		
M	GW	6,140,277	10/31/00	Tibbles et al.		507	201	12/31/1998	
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